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Communicable Disease Control *UPDATE*

MECKLENBURG COUNTY HEALTH DEPARTMENT
A Quarterly Publication

Disease Detectives

Inside this issue:

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Pertussis Testing and Reporting

During the month of January 2011, Mecklenburg County Health Department reported 1 case of pertussis (whooping cough). The following information is provided as a guide for testing and reporting of confirmed and probable cases.

2010 Case Definition

Case classification

Probable: In the absence of a more likely diagnosis, a cough illness lasting ≥2 weeks, with at least one of the following symptoms:

- paroxysms of coughing;
- inspiratory "whoop" (hear the "whoop" at ***www.cdc.gov***) or
- post-tussive vomiting; **AND**
- absence of laboratory confirmation; and
- no epidemiologic linkage to a laboratory-confirmed case of pertussis.

Confirmed: Acute cough illness of any duration, with isolation of *B. pertussis* from a clinical specimen (nasopharyngeal culture);

OR

Cough illness lasting ≥2 weeks, with at least one of the following symptoms:

- paroxysms of coughing;
- inspiratory "whoop"; or
- post-tussive vomiting; **AND**
- polymerase chain reaction (PCR) positive for pertussis;

OR

Cough illness lasting ≥2 weeks, with at least one of the following symptoms:

- paroxysms of coughing;
- inspiratory "whoop"; or
- post-tussive vomiting; **AND**,
- contact with a laboratory-confirmed case of pertussis.

The clinical case definition above is appropriate for endemic or sporadic cases. In outbreak settings, a case may be defined as a cough illness lasting at least 2 weeks (as reported by a health professional).

Laboratory Tests

The CDC only recommends testing with a nasopharyngeal swab for PCR or culture. Culture obtained from NP swab in the first two weeks of illness is 100% specific. NP PCR is 100% sensitive, but false positives can result. **The CDC does not recognize pertussis serology for use in confirming case definition, since it has never been standardized.** (See page 4 : ***PCR Testing for Diagnosing Pertussis: CDC Update for Best Practices***).

North Carolina law (10A NCAC 41A .0102) requires suspected or confirmed pertussis cases to be reported to the local health department within 24 hours. To report in Mecklenburg County, call:

Jane Hoffman, RN 704.336.5490
Belinda Worsham, RN 704.336.5498
Beth Quinn, RN 704.336.5398
Freda Grant, RN 704.336.6436
Penny Moore, RN 704.353.1270

For more information, contact Freda Grant at ***Freda.Grant@MecklenburgCountyNC.gov*** or 704.336.6436.

Did you know...
...that efficacy is 80-85% following three doses from DTaP vaccine? Efficacy data following 1 or 2 doses are lacking but it is likely lower. It is especially important that providers advise parents of infants that all people who live with the infant or who provide care for him or her be protected against pertussis with a one-time dose of Tdap vaccine.

Rescinding Suspension for Hib Vaccine Booster

On January 11, 2011, North Carolina State Health Director, Jeffery P. Engel, MD, issued a reinstatement of the Haemophilus influenzae Type B (Hib) Vaccine booster dose for North Carolina Immunization Program (NCIP) participants effective August 1, 2011.

In January 2008, a temporary suspension of Hib booster dose was issued for children on or after 12 months of age due to manufacturer shortage. The immunization requirement for the Hib booster (10A NCAC 41A.0401) includes:

Haemophilus influenza b conjugate vaccine – 3 doses of HbOC or PRP-T or 2 doses PRP-OMP before age 7 months and a booster dose of any type between 12-16 months. However:

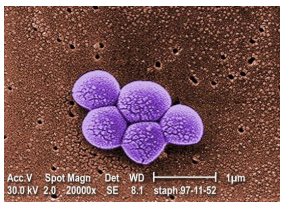
- Individuals born before October 1, 1988 are not required to be vaccinated against Haemophilus influenza b
- Only 2 doses are required if the first dose was given on or after 12 months of age (but before 15 months)
- Only 1 dose is required if the first dose was given on or after 15 months of age
- No vaccine is required past the 5th birthday

Available Vaccine Includes:

- PedvaxHIB (Hib): 2-dose primary schedule
- ActHIB (Hib): 3-dose primary schedule
- Hiberix (Hib): Booster only
- Comvax (Hib-Hep B): Not to be used at birth
- Pentacel (DTaP-IPV-Hib): Licensed for 4 doses at 2, 4, 6, and 15-18 months
- TriHIBit (DTap-Hib): Licensed for 4th dose of DTaP & Hib series

For additional information please visit the ***www.ImmunizeNC.com*** or contact Beth Young at 704.336.5076 or ***Elizabeth.Young@Mecklenburg CountyNC.gov.***

New! MRSA Treatment Guidelines



The Infectious Disease Society of America (IDSA) has released the first evidenced based guidelines for Methicillin-Resistant *Staphylococcus* aureus (MRSA).

Incision and drainage alone is the recommended primary treatment for simple infections (abscesses or boils). Antibiotics are recommended for the treatment of abscesses that present with severe or progressive disease lacking response to incision and drainage, systemic illness, extremes of age, areas difficult to drain and other additional complications.

Guidelines include:

- How to manage CA-MRSA skin and soft tissue infections (SSTI)
- Recurrent infections
- Recommended antibiotics
- Pediatric treatment guidelines
- Management of invasive systemic infection

These guidelines were published in the February 2011 issue of Clinical Infectious Diseases.

For additional information please visit the ***ISDA website*** or contact Beth Young at 704.336.5076 or ***Elizabeth.Young@Mecklenburg CountyNC.gov***.

This periodical is written and distributed quarterly by the Communicable Disease Control Program of the Mecklenburg County Health Department for the purpose of updating the medical community in the activities of Communicable Disease Control. Program members include: Health Director—E. Wynn Mabry, MD; Medical Director— Stephen R. Keener; MD; Deputy Health Director—Bobby Cobb; Director, CD Control—Carmel Clements; Sr. Health Manager—Lorraine Houser; CD Control nurses—Freda Grant, Jane Hoffman, Penny Moore, Elizabeth Quinn, Belinda Worsham; Childcare nurse—Elizabeth Young; TB Outreach nurse—Earlene Campbell-Wright (also Adult Day Health); Rabies/Zoonosis Control—Al Piercy; Health Supervisor—Carlos McCoy; DIS—Mary Ann Curtis, John Little, Michael Rogers, Jose' Pena; Preparedness Coordinator—Bobby Kennedy; CRI Coordinator—Amy Williams; Regional Surveillance Team—Valerie Lott, Denise Wall, Vivian Brown; Office Assistant—Audrey Elrod

Lorraine Houser
Carmel Clements
Editors

Updated Recommendations for Use of Tdap

Pertussis remains poorly controlled in the United Stated despite sustained coverage for childhood pertussis vaccination. In 2005, the Advisory Committee on Immunization Practices (ACIP) recommended Tdap for adolescents and adults to improve immunity against pertussis. Even with these recommendations Tdap coverage is only 56% among adolescents and less than 6% among adults.

ACIP recommends a single Tdap dose for persons aged 11 through 18 years who have completed the recommended childhood DTP/DTaP vaccination series and for adults aged 19 through 64 years. Two Tdap products are available in the United States. Boostrix is licensed for use in persons aged 10 through 64 years, and Adacel is licensed for use in persons aged 11 through 64 years. Both products are licensed for use at an interval of at least 5 years between the tetanus and diphtheria toxoids (Td) and Tdap dose. On October 27, 2010, ACIP approved the following additional recommendations: 1) use of Tdap regardless of interval since the last tetanus- or diphtheria-toxoid containing vaccine, 2) use of Tdap in certain adults aged 65 years and older, and 3) use of Tdap in under vaccinated children ages 7 through 10 years.

These additional recommendations are intended to remove identified barriers and programmatic gaps that contribute to suboptimal vaccination coverage. An important barrier that limited vaccination of persons with Tdap was unknown history of Td booster. Programmatic gaps included lack of licensed Tdap vaccine for children aged 7 through 10 years and adults aged 65 and older. The additional recommendations are made to facilitate use of Tdap to reduce the burden of disease and risk for transmission to infants.

ACIP guidance for use:
Pertussis vaccination, when indicated, should not be delayed and Tdap should be administered regardless of interval since the last tetanus or diphtheria toxoid-containing vaccine.

For both Tdap vaccines, the frequency and severity of adverse events in persons aged 65 years and older were comparable to those in persons aged less than 65 years.

Adults aged 65 and older (e.g. grandparents, child-care providers, and health-care practitioners) who have or who anticipate having close contact with an infant less than 12 months of age and who previously have not received Tdap should receive a single dose of Tdap to protect against pertussis and reduce the likelihood of transmission.

Children aged 7 through 10 years who are not fully vaccinated against pertussis and for whom no contraindication to pertussis vaccine exists should receive a single dose of Tdap to provide protection against pertussis. If additional doses of tetanus and diphtheria-toxoid containing vaccines are needed, then children aged 7 through 10 years should be vaccinated according to catch-up guidelines, with Tdap preferred as the first dose.

Currently, Tdap is recommended only for a single dose across all age groups. Further guidance will be forthcoming on timing of revaccination in persons who have received Tdap previously. For more information contact Beth Quinn at 704.336.5398 or ***Elizabeth.Quinn@MecklenburgCountyNC.gov***.

The Story of the CDC

The Centers for Disease Control and Prevention (CDC) is a world leader in public health. This agency began in 1946 as the "Communicable Disease Center" in Atlanta, Georgia; having descended from the wartime agency known as Malaria Control in War Areas (MCWA). Today, the CDC focuses on many areas of public health including infectious diseases, chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats. The CDC currently consists of eight national centers. Their headquarters remain in Atlanta with two national centers in other U.S. cities (National Institute for Occupational Safety and Health in Cincinnati, Ohio and the National Center for Health Statistics in Hyattsville, Maryland).

Currently, the CDC employs more than 15,000 people in more than 50 countries. In 1951, the CDC established the Epidemic Intelligence Service (EIS) as an early-warning system against biologic warfare and epidemics. The EIS officers respond to several hundred investigations throughout the world each year. Officers are professionals such as physicians, dentists, sanitarians, veterinarians, and scientists.

The CDC's vision for the 21st century is "Health Protection…Health Equity". It seeks to accomplish its mission by working with partners to monitor health, detect and investigate health problems, conduct research to enhance prevention, develop and advocate sound public health policies, implement prevention strategies, promote healthy behaviors, foster safe and healthful environments, and provide leadership and training.

For more information, contact Jane Hoffman at 704.336.5490 or ***Jane.Hoffman@MecklenburgCountyNC.gov*** .

Diagnosing Pertussis: CDC Update for Best Practices

Despite most children having received six doses of pertussis vaccination by the age of twelve, CDC reports a resurgence in this highly contagious cough illness in the past several years. In the early stages of pertussis, the symptoms are usually nonspecific, making it difficult for clinicians to identify the disease.

Polymerase Chain Reaction (PCR) is an important tool for timely diagnosis of pertussis and is increasingly available to clinicians. PCR is a molecular technique used to detect DNA sequences of the *Bordetella pertussis* bacterium and unlike culture, does not require viable (live) bacteria present in the specimen. PCR can give results that are falsely-negative or falsely-positive so it is important that healthcare providers utilize best practice guidelines when testing for pertussis to limit the number of inaccurate results. On February 14, 2011 CDC released the following Best Practices for PCR testing for symptomatic patients:

Test Only Patients With Signs and Symptoms of Pertussis
Testing asymptomatic persons and asymptomatic close contacts of confirmed cases only increases the likelihood of obtaining false positive PCR results. Post-exposure prophylaxis should never be deferred for testing or test results.

Best Time to PCR Test for Pertussis
PCR has optimal sensitivity during the first 3 weeks of cough when bacterial DNA is still present in the nasopharynx. After the fourth week of cough, the amount of bacterial DNA rapidly diminishes which increases the risk of obtaining falsely-negative results.

PCR testing following antibiotic therapy is not well understood, but testing after 5 days of antibiotic use is probably of no benefit and is not recommended.

Optimal Specimen Collection for PCR Testing for Pertussis
Specimens for PCR testing should be obtained by aspiration or swabbing the posterior nasopharynx. Throat swabs and anterior nasal swabs have unacceptably low rates of DNA recovery and should not be used for pertussis diagnosis. The swab tips may be polyester (such as Dacron®), rayon, or nylon-flocked. Cotton-tipped or calcium alginate swabs are not acceptable as residues present in these materials inhibit PCR assays. If feasible, nasopharyngeal (NP) aspirates that flush the posterior nasopharynx with a saline wash are preferred over swabs because this method results in a larger quantity of bacterial DNA in the sample.

Avoiding Contamination of Clinical Specimens with Pertussis DNA
Some pertussis vaccines have been found to contain PCR-detectable *B. pertussis* DNA. Environmental sampling has identified *B. pertussis* DNA from these vaccines in clinic environments. While the presence of this DNA in the vaccines does not impact the safety or immunogenicity of these vaccines, accidental transfer of the DNA from environmental surfaces to a clinical specimen can result in specimen contamination.

Understanding and Interpreting Testing Results
PCR assays for pertussis are not standardized across clinical laboratories. Testing methods, DNA targets used and result interpretation criteria vary, and laboratories do not use the same cutoffs for determining a positive result. Clinicians are encouraged to inquire about which PCR target or targets are used by their laboratories. Interpretation of PCR results, especially those with high Ct (cycle threshold) values, should be done in conjunction with an evaluation of signs and symptoms and available epidemiological information.

To summarize, PCR is an important tool for diagnosis of pertussis and can provide timely results with improved sensitivity over culture. Careful specimen collection and transport and a general understanding of the PCR assays performed will better ensure that clinicians obtain diagnostic test results that reliably inform patient diagnosis.

For additional information please reference: ***www.cdc.gov/pertussis/clinical/diagnostic*** or contact Belinda Worsham at 704.336.5498 or ***Belinda.Worsham@MecklenburgCountyNC.gov***.

FAQ

Q. Can elderly patients take Tdap vaccine?

A. On October 2010, the ACIP issued a recommendation that adults aged 65 years may take one dose of Tdap vaccine to replace one of the 10-year Td boosters.

Q. Do adults need Haemophilus influenza type B (HIB) vaccine?

A. According to the CDC, one dose of HIB vaccine should be considered for adults who have sickle cell disease, leukemia, HIV infection, or no spleen

Q. What is relapsing Hepatitis A?

A. Approximately 5-10% of acute hepatitis A cases resolve initial symptoms then several weeks later present with symptoms suggestive of acute hepatitis.. Patients with relapsing hepatitis A should expect a full recovery.

Arboviral Diseases

The following is an excerpt from memos sent on March 22, 2011 to NC medical providers from Megan Davies, MD, State Epidemiologist. Complete information can be found at ***www.meckhealth.org/ForProviders***.

Arboviral Diseases

Neuroinvasive arboviral diseases are reportable conditions in NC. These conditions are transmitted by a variety of species of mosquitoes and can cause symptoms ranging from fever to altered mental status to acute signs of central or peripheral neurologic dysfunction. LaCrosse encephalitis is the most commonly diagnosed arboviral disease in NC. Of the 153 cases reported from 1998-2008, 77% were residents of 6 western NC counties: Buncombe, Haywood, Transylvania, Jackson, Swain and Henderson. While less common, cases of West Nile Virus and Eastern Equine encephalitis occur throughout NC.

Serologic testing for arboviral diseases is offered at no charge from the State laboratory of Public Health. The submission form, DHHS 3445, is available on the ***lab's website***. Early diagnosis of LaCrosse Encephalitis is critical to reducing and eliminating unnecessary treatment; and also important for surveillance of the disease. Early recognition and diagnosis of LaCrosse encephalitis will help eliminate the practice of treating presumptive herpes simplex encephalitis with acyclovir or presumptive bacterial meningitis with antibiotics. Providers are encouraged to collect acute and convalescent specimens to assist in confirmation of these cases.

Tick Borne Rickettsial Diseases (TBRD)

TBRD, including Rocky Mountain Spotted Fever (RMSF) and infection with other *Rickettsia, Ehrllchia* and Anaplasma species, continues to be the most common tick borne disease reported in NC. During 2009-2010 over 500 cases were reported to the state and local health departments, though the actual number of cases is likely much larger. These are reportable conditions per NC law and require prompt treatment when suspected.

Regardless of cause, if TBRD is suspected, the patient should be treated promptly with doxycycline. Lab confirmation of infection may take weeks and treatment should not be delayed pending diagnosis. TBRD are potentially fatal and treatment guidelines can be found at the ***CDC's website***.

Submission of serological specimens for Immunofluorescent Assay (IFA) is the most accepted means to confirm a diagnosis of TBRD for surveillance purposes. Although testing is available for RMSF specifically, the test is not species specific and will cross react with other species in the genus *Rickettsia*. Ideally both acute sera (collected within 7-10 days of illness onset) and convalescent sera (collected ≥ 4 weeks of illness onset) should be submitted together for analysis.

Labs providing diagnostic services for Spotted Fever Rickettsiosis (as well as RMSF) include:

- NC SLPH offers no cost testing (use form ***DHHS 3445***
- ARUP Test Number: 0050369; CPT Code: 86757
- LabCorp Test Number: 016592; CPT Code: 86757
- Quest (Chantilly VA) Test Number: 6419; CPT Code 86757

Labs providing diagnostic services for Ehrlichiosis and Anaplasmosis include:

- NC SLPH offers no cost testing (use form ***DHHS 3445***)
- ARUP Ehrilichia Test Number: 0051004; CPT Code: 86666
- ARUP Anaplasmosis Test Number: 0097317; CPT Code: 86666
- LabCorp (Ehrlichia & Anaplasmosis) Test Number: 164722 CPT Code: 866666 (x4)
- Quest (Chantilly VA) (Ehrlichia & Anaplasmosis) test Number: 10611; CPT Code 86666 (x4)

Lyme Disease

In 2009 and 2010, over 150 cases of Lyme disease were reported in NC. Of those, 9 reported events met the case definition criteria for confirmed Lyme disease (LD) as well as not having any history of travel outside the county of residences. During the incubation period. Therefore, these events are considered to have been acquired in specific NC counties. Historically, it was once thought that LD could not be acquired in NC. This is no longer a true statement. Active surveillance shows that Wake County is now considered endemic for for LD for surveillance purposes. LD can be acquired in NC and should be considered even if the patient has not travelled to a historically endemic are for LD.

Healthcare providers should consider the possibility of LD in the appropriate clinical scenario and treat potential cases of LD early if the disease is suspected based on clinical findings. Serology is often required to fulfill surveillance criteria but should never be the primary basis for making diagnostic or treatment decisions. The Department of Public Health encourages healthcare providers to treat patients on the basis of clinical findings and not wait for confirmatory laboratory testing.

Healthcare providers can help establish a more comprehensive characterization of LD in NC, improve surveillance information and help differentiate between LD and Southern Tick-Associated Rash Illness (STARI) by performing the appropriate serological testing. Serologic testing for LD is not performed by the NC SLPH but can be ordered through private laboratories. See table at the end of the state memo.

Please contact Carl Williams or Jodi Reber at 919.733.3410 with any questions or concerns.

North Carolina Department of Health and Human Services
Division of Public Health • Epidemiology Section
Communicable Disease Branch • Immunization Branch (WCH Section)

North Carolina Public Health

Confidential Communicable Disease Report—Part 1

NC DISEASE CODE (see reverse side for code)	DATE OF SYMPTOM ONSET

ATTENTION PHYSICIANS/HOSPITALS:
Mail/fax this form to your local health department.

Mecklenburg County Health Department
700 North Tryon St., Ste. 214
Charlotte, NC 28202

Sexually Transmitted Diseases, HIV & AIDS
(Call) 704.432.1742 or (Fax) 704.336.6200

All Other Reportable Communicable Diseases
(Call) 704.336.2817 or (Fax) 704.353.1202

Patient's First Name | Middle | Last | Suffix | Maiden/Other | Alias

Birthdate *(mm/dd/yyyy)* | Sex ☐M ☐F ☐Trans. | Parent or Guardian *(of minors)* | Patient Identifier / SSN

Patient's Street Address | City | State | ZIP | County | Phone (____) ____-____

Age _____ Age Type ☐Years ☐Months ☐Weeks ☐Days

Race (check all that apply): ☐White ☐Black/African American ☐American Indian/Alaska Native ☐Native Hawaiian or Pacific Islander ☐Asian ☐Other ☐Unknown

Ethnic Origin ☐Hispanic ☐Non-Hispanic

Was patient hospitalized for this disease? (>24 hours) ☐Yes ☐No

Did patient die from this disease? ☐Yes ☐No

Is the patient pregnant? ☐Yes ☐No

Patient is associated with (check all that apply):
- ☐ Child Care (child, household contact, or worker in child care)
- ☐ School (student or worker)
- ☐ College/University (student or worker)
- ☐ Food Service (food worker)
- ☐ Health Care (health care worker)
- ☐ Correctional Facility (inmate or worker)
- ☐ Long Term Care Facility (resident or worker)
- ☐ Military (active military, dependent, or recent retiree)
- ☐ Travel (outside continental United States in last 30 days)

Initial Source of Report to Public Health:
- ☐ Health Care Provider (specify):
  - ☐ Hospital
  - ☐ Private clinic/practice
  - ☐ Health Department
  - ☐ Correctional facility
- ☐ Laboratory
- ☐ Other

Name: _____
Contact Person/Title: _____
Phone: (____) ____-____ Fax:(____) ____-____
Date Local Health Department Notified: _____

Where was disease/condition most likely acquired?
- ☐ In patient's county of residence
- ☐ Outside county, but within NC - County: _____
- ☐ Out of state - State/Territory: _____
- ☐ Out of USA - Country: _____
- ☐ Unknown

Local Health Department Use Only
Was this disease part of a recognized outbreak? ☐Yes ☐No
Outbreak setting:
- ☐ Restaurant/Retail (name): _____
- ☐ Household (index case): _____
- ☐ Child Care (name): _____
- ☐ Other (specify): _____
- ☐ Community (index case): _____

Local Health Department Use Only
Communicable Disease Nurse or Designee Reporting to DPH:
Name: _____
Phone: (_____) _____-_____
Date sent to DPH: _____
Local Health Director's Signature or Stamp Approving Report

CLINICAL INFORMATION

Specify patient symptoms and treatment:

For sexually transmitted diseases only—if patient was treated, specify medication, dosage, & duration:

DIAGNOSTIC TESTING

LABORATORY TESTING:

Collection Date	Result Date	Type of Test	Specimen Source	Results (include serogroup/type)	Reference Range	Lab Name—City/State
	Attach Lab Report					

DHHS 2124 (Revised January 2008) EPIDEMIOLOGY

Reporting Communicable Diseases – Mecklenburg County

To request N.C. Communicable Disease Report Forms, telephone 704.336.2817
Mark all correspondence "CONFIDENTIAL"

Tuberculosis:

TB Clinic 704.432.2490
Mecklenburg County Health Department FAX 704.432.2493
2845 Beatties Ford Road
Charlotte, NC 28216

Sexually Transmitted Diseases, HIV, & AIDS:

HIV/STD Surveillance 704.432.1742
Mecklenburg County Health Department FAX 704.336.6200
700 N. Tryon Street, Suite 214
Charlotte, NC 28202

All Other Reportable Communicable Diseases including Viral Hepatitis A, B & C:

Report to any of the following nurses:

Freda Grant, RN 704.336.6436
Jane Hoffman, RN, 704.336.5490
Elizabeth Quinn, RN 704.336.5398
Belinda Worsham, RN 704.336.5498
Penny Moore, RN 704.353.1270
Communicable Disease Control FAX 704.353.1202
Mecklenburg County Health Department
700 N. Tryon Street, Suite 271
Charlotte, NC 28202

Animal Bite Consultation / Zoonoses / Rabies Prevention:

Al Piercy, RS 704.336.6440
Communicable Disease Control FAX 704.432.6708
Mecklenburg County Health Department
618 N. College St.
Charlotte, NC 28202
or State Veterinarian, Carl Williams, DVM 919.707.5900
State after hours 919.733.3419

Child Care Nurse Consultant:

Elizabeth Young, RN 704.336.5076
Communicable Disease Control FAX 704.353.1202
Mecklenburg County Health Department
700 N. Tryon Street, Suite 271
Charlotte, NC 28202

Suspected Food borne Outbreaks / Restaurant, Lodging, Pool and Institutional Sanitation:

Food & Facilities Sanitation (Mon-Fri) 704.336.5100
Mecklenburg County Health Department (evenings; Sat/Sun) 704.432.1054
700 N. Tryon Street, Suite 208 (pager evenings; Sat/Sun) 704.580.0666
Charlotte, NC 28202 FAX 704.336.5306

Mecklenburg County Health Department